



REMR MATERIAL DATA SHEET CM-SE-1.53

CONCRETE SEALER: PE-50 PENETRATING SEALER

1. NAME

PE-50 Penetrating Sealer

2. MANUFACTURER

Steelcote Manufacturing Company
St. Louis, MO 63103
Telephone: 314-771-8053

3. DESCRIPTION

Steelcote PE-50 Penetrating Sealer consists of an epoxy resin made from the condensation of Bisphenol A and epichlorohydrin, combined with a polysulfide polymer and an aromatic amine.

It has no plasticizers, flexibilizers, oils, unreactive diluents or mineral fillers in the resin or curing agent.

4. USES*

Steelcote PE-50 Penetrating Sealer is designed to seal any clean, dry, exterior concrete surface.

5. MANUFACTURER'S TECHNICAL DATA*

Physical properties:

Solvents, by weight	≤50%
Mixing ratio, by vol	1:1
Viscosity, 70-80 °F	<30 cps
Pot life, 75-85 °F	>2 hr
Color	Clear amber

* Manufacturer's Technical Bulletin
PE-F-1A

Performance properties:

Water absorption	<0.5%
ASTM D 570-6.1	
Tensile strength, psi	2,000 min
ASTM D 2370 (75-80 °F)	
Compressive strength, psi	8,000 min
ASTM D 698 (75-80 °F)	

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Surface preparation: Mechanical surface preparation is the most effective way of opening the pores of concrete for maximum penetration by Steelcote PE-50. Sandblasting, waterblasting or scarification are mechanical means and are highly recommended, since they etch the surface as well as remove any laitance, grease, oil, or old sealers.

Smooth- or broom-finished parking decks of new concrete may be etched with a 10% muriatic acid solution, then neutralized with a 2% solution of Aqua Ammonia in water. When etching is complete, the surface should have the texture of medium grit sandpaper. If texture is not there, repeat the process or change to mechanical surface preparation.

Mixing: Steelcote PE-50 mixes readily. It is a 1:1 ratio of base to activator and vigorous stirring is enough to start the reaction. After being mixed, the material requires an induction period of 45 min to 1 hr before application at 77 °F. It is recommended that enough material be mixed ahead so that applicators do not have to wait for the induction period a second time.

Application: Surface must be clean and dry when application begins. No application shall take place until a new surface is at least 21 days old.

Steelcote PE-50 is designed to penetrate concrete pores; therefore, it is essential that enough material be applied to the surface to allow it to soak in as deeply as possible. Flood the surface; then roll the sealer onto the deck, keeping a puddle in front of the roller. After initial application, cross-roll to assure uniform coverage and wetting of the surface.

Application temperature: Material is traffic-ready in 4 to 6 hr at 77 °F. Lower temperatures retard drying; higher temperatures speed it up. Atmospheric temperatures for application should be 50 °F (minimum) and rising, so that a surface temperature of 60 °F is achieved for normal drying.

Coverage:

Smooth concrete-100 to 125 sq ft/gal
Broom finished-90 to 100 sq ft/gal
Rake finished-80 to 90 sq ft/gal

These are maximum rates. Fifteen or twenty minutes after application, the surface should be inspected and any dry spots recoated. Any puddles should be spread out to eliminate slick spots.

7. CORPS OF ENGINEERS' EVALUATION
(tested as concrete sealers only)

Physical and mechanical properties:

Percent solid
(ASTM D 1644, Method A): 47.1%

Percent moisture absorption
(ambient temp) (ASTM C 642-82):

1 day	0.40%
2 days	0.66%
4 days	0.74%
7 days	0.91%

Ratio of percent moisture absorption
for treated to nontreated specimen
(2-day submersion): 14.0%

Percent vapor transmittance (see REMR
Technical Note CS-ES-1.8):

2 days	0.11%
4 days	0.18%
7 days	0.26%

Ratio of percent vapor transmittance
for treated to nontreated specimen
(2-day diffusion): 5.61%

8. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of activities involving potentially hazardous and toxic chemical substances. Manufacturer's recommendations to protect occupational health and environmental quality should be carefully followed. Material safety data sheets must be obtained from the manufacturers of such materials. In cases where the effects of a chemical substance on occupational health or environmental quality are unknown, chemical substances should be treated as potentially hazardous toxic materials.